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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/510,261	10/05/2004	Ronaldus Maria Aarts	NL 020284	8738

24737 7590 04/26/2007
PHILIPS INTELLECTUAL PROPERTY & STANDARDS
P.O. BOX 3001
BRIARCLIFF MANOR, NY 10510

EXAMINER

NGUYEN, KHAI M

ART UNIT	PAPER NUMBER
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2819

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	04/26/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/510,261

Applicant(s)

AARTS ET AL.

Examiner

Khai M. Nguyen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 October 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6, 10 and 12-16 is/are rejected.
- 7) ☒ Claim(s) 7-9 and 11 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 10/05/2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 10/04 & 09/05
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Priority

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Information Disclosure Statement

2. Initiated copies of the information disclosure statements (IDS) submitted on 10/05/2004 and 09/12/2005 are attached herewith.

Specification

3. The application has not been checked to the extent necessary to determine the presence of all possible typographical and grammatical errors. However, Applicant's cooperation is requested in correcting any errors of which he/she may become aware in the application.
4. The specification is objected to because it does not include headings as suggested in the MPEP – see below.

The following guidelines illustrate the preferred layout for the specification of a utility application. These guidelines are suggested for the applicant's use.

Arrangement of the Specification

As provided in 37 CFR 1.77(b), the specification of a utility application should include the following sections in order. Each of the lettered items should appear in upper case, without underlining or bold type, as a section heading. If no text follows the section heading, the phrase "Not Applicable" should follow the section heading:

- (a) TITLE OF THE INVENTION.
- (b) CROSS-REFERENCE TO RELATED APPLICATIONS.
- (c) STATEMENT REGARDING FEDERALLY SPONSORED RESEARCH OR DEVELOPMENT.
- (d) THE NAMES OF THE PARTIES TO A JOINT RESEARCH AGREEMENT.

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- (e) INCORPORATION-BY-REFERENCE OF MATERIAL SUBMITTED ON A COMPACT DISC.
- (f) BACKGROUND OF THE INVENTION.
 - (1) Field of the Invention.
 - (2) Description of Related Art including information disclosed under 37 CFR 1.97 and 1.98.
- (g) BRIEF SUMMARY OF THE INVENTION.
- (h) BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWING(S).
- (i) DETAILED DESCRIPTION OF THE INVENTION.
- (j) CLAIM OR CLAIMS (commencing on a separate sheet).
- (k) ABSTRACT OF THE DISCLOSURE (commencing on a separate sheet).
- (l) SEQUENCE LISTING (See MPEP § 2424 and 37 CFR 1.821-1.825. A "Sequence Listing" is required on paper if the application discloses a nucleotide or amino acid sequence as defined in 37 CFR 1.821(a) and if the required "Sequence Listing" is not submitted as an electronic document on compact disc).

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-6, 10, and 12-16 are rejected under 35 U.S.C. 102(b) as being anticipated by Edler et al. (US 5,511,093), hereinafter referred to as Edler.

Regarding claim 1, Edler discloses a method of encoding (by encoder or transmitter unit 1 of Figs. 1-2) a multi-channel signal (21/22 or $x(n)$, $y(n)$) including at least a first signal component ($x(n)$) and a second component ($y(n)$), the method comprising the steps of:

determining a set of filter parameters (predictor coefficients a_k) of a prediction filter (FIR filter 5 of Fig. 2 – col. 3, lines 34-35) such that the prediction filter (5) provides

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an estimate ($y'(n)$ – col. 57-67) of the second signal component ($y(n)$) when receiving (via delay 4 – see Figs. 2-3) the first signal component ($x(n)$) as an input; and

representing (to the receiver unit 2 of Fig. 1) the multi-channel signal ($x(n)$, $y(n)$) as the first signal component ($x(n)$) and the set of filter parameters (a_k) – see Fig. 1, between the input and output of receiver unit 2).

Regarding claim 2, Edler discloses that determining the filter parameters (a_k) such that a difference (eq. 2) of the second signal component ($y(n)$) and the estimated signal component ($y'(n)$) is smaller than a predetermined value (output of the combiner/adder 7 of Fig. 2).

Regarding claim 3, Edler discloses that the representing (to the receiver unit 2) the multi-channel signal as the first signal component ($x(n)$) and the set of filter parameters (a_k) including step of representing (to the receiver unit 2) the multi-channel signal as the first signal component ($x(n)$), the set of filter parameters (a_k), and an error signal ($e(n)$ – col. 1, lines 63-67) indicative of the difference of the second signal ($y(n)$) and the estimated signal component ($y'(n)$), if the difference is not smaller than the predetermined value.

Regarding claim 4, Edler discloses the method of claim 1, wherein the first signal component corresponds to a first signal energy and the second signal component corresponds to a second signal energy smaller or different than the first signal energy (col. 3, lines 55-58).

Regarding claims 5-6, Edler discloses the method of claim 1 including transforming (i.e., providing) at least a first signal source signal component and a

second signal component of a multi-channel source signal into the first and second signal components, wherein the first and second signal components comprises a stereophonic signal (i.e., the audio channel signals of Figs. 1-2) including a left ($x(n)$) and a right ($y(n)$) signal component.

Regarding claim 10, Edler discloses a method of decoding (or encoding) multi-channel signal information (abstract), the method comprising the steps of:

receiving a first signal component ($x(n)$) and a set of filter parameters ($a_0...a_k$ – see Figs. 1-3);

estimating a second signal component ($y(n)$) using a prediction filter (FIR prediction filter 5) corresponding to the received set of filter parameters, the prediction filter (5) receiving the received (via delay elements 4 – also shown in Fig. 3 as 8, 10...) first signal component ($x(n)$) as an input.

Regarding claim 12, Edler discloses an arrangement for encoding a multi-channel signal including at least a first signal component ($x(n)$) and a second signal component ($y(n)$) the arrangement comprising:

a prediction filter (FIR filter 5 of Figs. 2-3) for estimating (col. 1, lines 63-67) the second signal component ($y(n)$), the prediction filter (5) corresponding to a set of filter parameters ($a_0...a_k$) and receiving the first signal component ($x(n)$) as an input (on line 21); and

processing means (6) for representing (to receiver unit 2) the multi-channel signal as the first signal component ($x(n)$) and the set of filter parameters (a_k).

Regarding claim 13, Edler discloses an arrangement (Figs. 1-3) for encoding/decoding a multi-channel signal corresponding to at least two signal components (on lines 21-22), the arrangement comprising:

receiving means (including elements 8, 9... of Fig. 3) for receiving a first signal component ($x(n)$) of the multi-channel signal and a set of filter parameters ($a_0 \dots a_k$); and

a prediction filter (FIR prediction filter portion of Figs. 2-3) for estimating a second signal component of the multi-channel signal, the prediction filter receiving the received set of filter parameters and the received first signal component as an input.

Regarding claim 14, Edler discloses (Figs. 1-3) a data signal including multi-channel signal information (on lines 21-22), the data signal being generated by a method of encoding (by transmitter or encoder unit 1) a multi-channel signal including at least a first signal component ($x(n)$) and a second signal component ($y(n)$), the method comprising the steps of:

determining a set of filter parameters ($a_0 \dots a_k$) of a prediction filter (FIR prediction filter 5) such that the prediction filter (5) provides an estimate ($y'(n)$) of the second signal component ($y(n)$) when receiving the first signal component ($x(n)$) as an input; and

representing (to the receiver or decoder unit 2) the multi-channel signal as the first signal component ($x(n)$) and the set of filter parameters (a_k).

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Regarding claim 15, the scope of this claim is essentially the same as the scope of claim 14. Therefore, it is rejected for the same reason above.

Regarding claim 16, the scope of this claim is essentially the same as the scope of claim 12. Therefore, it is rejected for the same reason above.

Allowable Subject Matter

6. Claims 7-9 and 11 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter: the references of record neither reveal nor render obvious the recited combinations including, separately, the step of transforming at least the first and second source signal components by a predetermined transformation into the principal component signal including most of the signal energy than the principal and at least the residual signal including less energy than the principal component signal; and the step of generating a first and second decoded signal component by inversely transforming the received first signal component and the estimated second component.

Prior Art

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure (notes references cited on PTO-892 Form attached herewith).

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Contact Information

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Khai M. Nguyen whose telephone number is 571-272-1809. The examiner can normally be reached on 9:00 - 5:30 Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rexford (Rex) Barnie can be reached on 571-272-7492. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


April 21, 2007

Khai M. Nguyen
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571-272-1809